STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
COLUMBIA ENVIRONMENTAL FIELD OFFICE
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February 1, 2012

The Honorable Dennis Webb
Mayor
Town of Bell Buckle
P.O. Box 276
Bell Buckle, TN 37020

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
RECEIPT#: 91 7108 2133 3937 8798 5084

Re: Performance Audit Inspection
Town of Bell Buckle STP
NPDES Permit # TN0020591
Bedford County

Dear Mayor Webb,

On January 11 and 18, 2012, I conducted a Performance Audit Inspection (PAI) at the Bell Buckle sewage treatment plant (STP). Specifically, the wastewater plant was inspected to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permit, with a more intensive review of the laboratory operations, including the observation of sample collection, analysis, and examination of the facility's records. During the PAI, I met with Randy Johnson, Bell Buckle Chief WWTP Operator.

General

1. Bell Buckle's plans are to upgrade Basin 5 and add a head works to the STP before the end of 2012.

2. The STP does not allow pump and haulers to discharge in their facility.

3. New bench sheets were being used on the second day of this inspection which included items required on page 5 of the NPDES permit under 1.2.4. The older bench sheets did not meet permit requirements.

4. The STP land applies their biosolids in fields adjacent to the STP. Division approval was given by letter dated June 27, 2008 with no expiration date. Such a program needs to be reviewed on a frequent basis. Therefore, this letter serves as notice that any previous site(s) approved for Bell Buckle STP land application will expire as of August 30, 2013. The renewal of any application site will require that the site(s) go through the standard application process. A copy of the most recent (February 3, 2011) Guidelines for the Land Application and Surface Disposal of Biosolids was given to Mr. Johnson.

5. The general housekeeping of the lab was very good.

6. Between these two site inspections, Mr. Johnson had contacted several representatives that plan to assist him in reviewing some of his lab techniques.

7. During the site visit of January 11, 2012 the manhole located in front of the STP was overflowing due to heavy rains having occurred in the area overnight. Bell Buckle currently only reports overflows when the monthly reports are submitted by the 15th of the following month. As per Bell Buckle's permit, an overflow is considered a non-compliance and should be reported within 24 hours from the time the permittee becomes aware of the circumstances. Additionally, written documentation must be submitted within five days and include the items as shown on pages 12 and 13 under Part 2, General Permit Requirements under 2.3.2 Reporting of Noncompliance. Failure to report overflows in the matter above is a violation of Bell Buckle's NPDES permit.

8. The 6-inch underground air pipe header line between the blower and plant had several noticeable leaks. Its repair is recommended.

9. A new dissolved oxygen meter was recently purchased. It is recommended that this be included in the STP's annual calibration program.

10. It is recommended that the effluent composite sampler's thermometer be placed into a sealed container.

11. Currently, the alternate cognizant official, Randy Johnson, is signing the monthly DMRs. It is suggested that during normal circumstances that the main cognizant official, Mayor Webb, sign future STP DMRs.

12. The SOP should be updated annually, reviewed, and signed by all personnel who perform any lab test where results are reported as part of the NPDES permit.

13. The effluent composite sampler had ice build up within that needs to be removed.

14. Both composite samplers capture samples based on time proportional. This needs to be changed to flow proportional as per page 5 under 1.2.3. test procedures part c. Failure to obtain flow proportional samples is a violation of Bell Buckle's NPDES permit.

15. In a CEI conducted on October 29, 2010, it was noted that there were significant amounts of algae on the clarifier weirs that should be removed. During this visit, the weirs needed cleaning. It is recommended that a routine to clean these weirs be implemented, and this maintenance work recorded after each completion.

16. The plant has no influent flow weir. The effluent has a 10-inch Palmer-Bowlus flume. A manual calibration check of the flow meter should be performed and documented frequently enough that Bell Buckle is confident with the effluent's electronic flow meter reading. Per part 1.2.1 on page 4 of Bell Buckle's NPDES permit, the acceptable range is $\pm$ 10%.

17. Conversations indicated that the influent flow meter (EMCO 4411e) has not been calibrated per the manufacturer's instructions in some time due to the current installation set up. However, calibration must be performed at least annually. Consideration for its calibration should be made possibly during a low flow time frame or when the holding tank has sufficient capacity.

18. For the total suspended solids parameter testing, if pre-washed purchased filters are not used then they must be washed and dried each time as per standard methods. The current method can continue if a "study" is annually conducted. A procedure for this "study" was provided to Mr. Johnson. Failure to follow standard method, 2540 D, is a violation of Bell Buckle's NPDES permit and 40 Codes of Federal Regulations (CFR), Part 136. Reference page 5 of the permit under Part 1.2.3., Test Procedures b.

19. The use of glucose-glutamic acid (GGA) for $CBOD_5$ is not part of the current procedures. Failure to follow standard method, 5210 B, is a violation of Bell Buckle's NPDES permit and 40 Codes of Federal Regulations (CFR), Part 136. Reference page 5 of the permit under Part 1.2.3., Test Procedures b.

20. Currently, the dissolved oxygen sample is captured in one container then transferred to the designated dissolved oxygen bottle. It is recommended that another capture method be implemented. Either use a portable meter or capture the sample directly into the bottle for direct analysis.

21. "Secondary" standards are used for calibration of the chlorine meter. These can be used if a semi-annual calibration curve is prepared. A procedure to prepare such a curve was provided to Mr. Johnson. Secondary (gel) standards can then be used if they agree within $\pm$ 10% of the curve. Failure to follow standard method, 4500-Cl, is a violation of Bell Buckle's NPDES permit and 40 Codes of Federal Regulations (CFR), Part 136. Reference page 5 of the permit under Part 1, B. Monitoring Procedures, 2. Test Procedures b.

22. The pH meter would not show its slope. Such data needs to be shown on the instrument's calibration bench sheet. The meter either needs to be repaired or a reliable meter obtained. See related items 22 and 23.

23. Since the plant's pH result often fluctuates above and below 7, a three point calibration needs to be performed prior to each use.

24. For the ammonia as nitrogen parameter, the Nesslerization method is used. It is one of the older accepted methods. Soon this method will not be acceptable. Additionally, the reagents are becoming increasingly difficult to purchase. The STP is encouraged to use another approved method.

25. It is recommended that three dilutions be used in the *E. coli* test. Currently, two are used. Additionally, ensure the apparatus is sterilized between each sample preparation. Although coliform is not tested or required, reference 9222B step F for details of proper steps between filtrations.

26. Ensure that a Quality Control (QC) program is established. Duplicates should be run on a regular basis for all parameters. EPA recommends running a duplicate every tenth sample.

27. The *E. coli* incubator is to be maintained at a temperature of 35.5 +/- 0.5°C. Currently, the thermometer in use shows the degrees in increments of 1°C. It is suggested that a thermometer be used that has increments of 0.1°C so that the range of 35 to 36°C can be determined more precisely and easily.

28. I will provide Mr. Johnson with a contact name in order to obtain a certificate of analysis (COA) on distilled water packaged by Great Value. The COAs or analysis sheets should be kept for each lot code of distilled water used in the Bell Buckle STP's laboratory analysis.

This concludes my PAI comments and suggestions. I wish to express my appreciation to Mr. Johnson for his time and assistance in this inspection. Please provide the Columbia Environmental Field Office (CEFO) within thirty (30) days of receipt of this letter a written description of the actions that the Town of Bell Buckle will take to address the items 7 through 28. If you have any questions, you may contact me at (931) 490-3940.

Sincerely,

DeWitt Logsdon

DeWitt Logsdon
Environmental Protection Specialist III
Division of Water Pollution Control

cc: Randy Johnson — Bell Buckle Chief WWTP Operator
TDEC — Enforcement & Compliance Section